

REMARKS

Claims 1-3 and 5-29 are pending in this application, claims 7, 16, 17, and 23-29 having been withdrawn by the Examiner. By this Amendment, independent claim 1 is amended, claims 5, 12, 14, 19 and 20 are amended for form, withdrawn claims 16 and 17 are amended for form, and withdrawn claims 23-25 are amended in accordance with the amendments to independent claim 1. No new matter is added. Applicants request reconsideration of the application based on the following remarks.

Rejections under 35 U.S.C. ' 102

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The Office Action rejects claims 1, 3, 5, 8, 11-13, 15, and 21 under 35 U.S.C. ' 102(b) as being anticipated by KR 10-2003-0086056 to Shim et al. (hereinafter AShim@). Applicants respectfully traverse this rejection and request reconsideration of the claims for at least the following reasons.

Shim does not disclose each and every feature recited in amended independent claim 1. Specifically, Shim does not disclose “a gas retaining means having a plurality of reaction cells, wherein an upper space of the susceptor is divided by a plurality of partition walls so as to increasingly broaden the width of the reaction cells from the inside to the outside of the gas retaining means for partitionally accommodating and concurrently retaining the respective gases distributed from the gas distribution means; a rotation driving means for rotating selectively one of the gas retaining means and the susceptor such that the gases

concurrently retained in the respective reaction cells are exposed to the substrates in sequence,” as recited in amended independent claim 1 (emphasis added).

The Office Action asserts that Shim discloses a gas supply part 100 (see Shim, Fig. 3) and members 131-134 (see Shim, Figs. 5-7) that allegedly correspond to the above-recited features (see Office Action, pages 3 and 4). Applicants disagree with this assertion for at least the following reasons.

As previously mentioned in the February 23, 2010 Amendment, Shim suffers from the same problems described in the prior art that the present invention seeks to overcome. Specifically, Shim suffers from the amount of time required for an appropriate amount of a reaction gas and an inert gas to reach the substrate.

For example, Shim discloses that gas supply part 100 is located at the upper portion of a rotary disc part 170 and supplies gas into a reaction chamber (see Shim, Abstract). However, Shim’s gas supply part 100 does not concurrently retain a plurality of gases inside the reaction chamber, because the reaction gas jet parts and the inert gas jet parts comprising the stick-type members 131-134 that form the injection grooves are alternately installed at the gas supply part 100 (see Shim, Abstract).

Indeed, because the reaction gas injector and the inert gas injector are alternately installed, the reaction gas and the inert gas are not respectively housed within the reaction chamber at the same time. As a result, at no time does Shim’s reaction chamber concurrently hold both the reaction gas and the inert gas separate and apart from one another. Consequently, Shim does not disclose the features recited above in amended independent claim 1.

In addition, Shim merely discloses an inner space of injection grooves composed of stick-type members and that a thin film is deposited only under the inner space of these stick-type injection grooves while a susceptor is rotated. In contrast, Applicants’ disclosure provides an inner space of reaction cells configured in such a way as to increasingly broaden

from the inside of the gas retaining means to the outside of the gas retaining means. As a result, Applicants' invention discloses that a thin film can be deposited all around under the inner space of the reaction cells, excluding the space under the partition walls, while the susceptor or the gas retaining means is rotated. It follows that Applicants' invention provides greater advantages over Shim, in that Applicants' invention is able to supply a larger amount of gases than Shim to each of the substrates in the same cycle of time. Applicants' invention can thus achieve a desired thin film faster than the invention of Shim.

For at least the foregoing reasons, Applicants respectfully request that the anticipation rejection of amended independent claim 1 be withdrawn. Also, claims 3, 5, 8, 11-13, 15, and 21 depend from claim 1. Accordingly, Applicants respectfully request that the anticipation rejection of these claims also be withdrawn, at least based on their respective dependence on claim 1, as well as for the additional features that each of these claims recites.

Rejections under 35 U.S.C. ' 103(a)

To establish a *prima facie* case of obviousness under 35 U.S.C. ' 103(a), three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based upon the Applicants' disclosure. A failure to meet any one of these criteria is a failure to establish a *prima facie* case of obviousness. See MPEP ' 2143.

The Office Action rejects claim 2 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of U.S. Patent No. 6,634,314 to Hwang et al. (hereinafter AHwang@); rejects claim 6 under 35 U.S.C. ' 103(a) as being unpatentable over Shim; rejects claim 9 under 35

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U.S.C. ' 103(a) as being unpatentable over Shim in view of U.S. Patent No. 6,132,512 to Horie et al. (hereinafter "Horie"); rejects claim 10 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Horie, and further in view of U.S. Patent No. 6,929,830 to Tei et al. (hereinafter "Tei"); rejects claim 10 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Horie, and further in view of U.S. Patent Application Publication No. 2006/0000412 to Ahn et al. (hereinafter "Ahn"); rejects claim 14 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of U.S. Patent Application Publication No. 2005/0017100 to Watanabe et al. (hereinafter "Watanabe"); rejects claim 18 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of U.S. Patent No. 5,884,009 to Okase; rejects claim 18 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of U.S. Patent No. 5,223,001 to Saeki et al. (hereinafter "Saeki"); rejects claim 18 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of U.S. Patent No. 6,183,564 to Reynolds; rejects claim 19 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Okase, and further in view of U.S. Patent No. 6,821,563 to Yudovsky; rejects claim 19 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Saeki, and further in view of Yudovsky; rejects claim 19 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Reynolds, and further in view of Yudovsky; rejects claim 19 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Reynolds, and further in view of U.S. Patent No. 5,281,274 to Yoder; rejects claim 20 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Okase and Yudovsky, and further in view of U.S. Patent No. 6,156,151 to Komino et al. (hereinafter "Komino") and U.S. Patent Application Publication No. 2005/0167052 to Ishihara et al. (hereinafter "Ishihara"); rejects claim 20 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Saeki and Yudovsky, and further in view of Ishihara; rejects claim 20 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Reynolds and Yudovsky, and further in view of Ishihara; rejects claim 20 under 35 U.S.C. ' 103(a) as being unpatentable over Shim in view of Reynolds and Yoder, and further in view of Ishihara; and rejects claim 22 under 35 U.S.C.

' 103(a) as being unpatentable over Shim in view of Japanese Patent No. 2002-324760 to Toyoda et al. (hereinafter "Toyoda"). Applicants respectfully traverse these rejections and request reconsideration of the claims for at least the following reasons.

For the reasons discussed above with regard to amended independent claim 1, Applicants respectfully submit that independent claim 1 is patentable over the applied references, in any combination. Claims 2, 6, 9, 10, 14, 18-20, and 22 depend from claim 1. Accordingly, Applicants respectfully request that the rejections of these claims be withdrawn, at least based on their respective dependence on claim 1, as well as for the additional features that each of these claims recites.

Rejoinder

Upon allowance of independent claim 1, and in accordance with MPEP §821.04, Applicants respectfully request rejoinder of withdrawn claims 7, 16, 17 based upon their respective dependence on independent claim 1 and respectfully request rejoinder of withdrawn claims 23-29 because they incorporate the amendments to independent claim 1.

Regarding Doctrine of Equivalents

Applicants hereby declare that any amendments herein that are not specifically made for the purpose of patentability are made for other purposes, such as clarification, and that no such changes shall be construed as limiting the scope of the claims or the application of the Doctrine of Equivalents.

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CONCLUSION

Applicants respectfully requests that a timely Notice of Allowance be issued in this case.

If any fees, including extension of time fees or additional claims fees, are due as a result of this response, please charge Deposit Account No. 19-0513. This authorization is intended to act as a constructive petition for an extension of time, should an extension of time be needed as a result of this response. The Examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

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